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Drug resistant tuberculosis in urban Thai children: a 10 year review

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Background: Problem of drug resistant tuberculosis (DR-TB) has currently gained a major concern in magnitude. In the settings where the rates of DR-TB may be high, initial treatment regimen may be modified by knowledge of the resistance patterns. We aimed to determine the prevalence, susceptibility pattern, and risk factors of drug resistant tuberculosis in pediatric patients.

Methods: Retrospective descriptive study was conducted in children (0-18 years) receiving care at Queen Sirikit National Institute of Child Health who had positive culture and available susceptibility pattern of *M. tuberculosis*. Drug resistant tuberculosis (DR-TB) was defined as resistance to at least one of antituberculosis drugs.

Results: Susceptibility results were available in 78 cases (85.7%) out of 91 positive cultures for *M. tuberculosis.* The sensitivity of tuberculin test using the cut-off point of 10 mm. induration for non-HIV infected patient, and 5 mm. induration for HIV infected patients were 71.4% and 14.3% respectively. Resistance to at least one anti-tuberculosis drug were found in 22 cases (28.2%) for which streptomycin resistance being the most common (21.7%) followed by isoniazid (11.5%) and rifampicin (5.1%). Multi-drug resistance (MDR), i.e. resistance to at least both isoniazid and rifampicin, was observed in 3 cases (3.8%) of cases. A history of previous treatment and bone and joint involvement were significantly higher for DR-TB cases: 18.2% vs. 1.8%, p = 0.0078 and 22.7 vs. 1.8%, p = 0.0018, for DR-TB and drug susceptible-tuberculosis, respectively. Cases with DR-TB were significantly less likely to complete their treatment course compared to their counterpart (54.5% vs. 87.5%, p = 0.0018). No significant differences in resistance rate by age, gender, clinical presentations, HIV serostatus was observed. Case fatality rates were 1.7% and 4.5% for drug susceptible and drug resistant tuberculosis.

Conclusion: The sensitivity of tuberculin skin test in detecting culture-proven tuberculosis test was rather low among both HIV infected and non-HIV infected children. The rates of isoniazid and streptomycin resistance are causes of concern. History of previous treatment, involvement of bone and joint were associated with drug resistant tuberculosis. Ethambutol may be preferable compared to streptomycin in an empirical treatment regimen due to the high rate of streptomycin resistance.

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Tuberculosis in prisoners in four reclusion centers in Medellin and Bucaramanga, Colombia. 2010-2011

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Background: Jails are considered reservoirs of Tb, therefore, an important threat to public health. Objective: to determine the incidence and epidemiology of Tb in prisoners in four jails, two of each for male and female inmates.

Methods: Prospective cohort study. All prisoners with respiratory symptoms and their personal contacts were evaluated. After signed consent forms, we collected three spontaneous sputum and blood samples on consecutive days. Auramine-rodhamine stain and cultures in thin layer agar, Löwestein-Jensen and MGIT were performed. Additionally, susceptibility tests were performed for first line drugs and HIV testing. We also collected socio-demographic and clinical data, and personal and family history. To determine overcrowding conditions, the width and length of the cells were measured and number of prisoners in each cell was determined.

Results: We evaluated 2103 prisoners, and identified 961 with lower respiratory symptoms (92.5% were men). Among them, 47 were diagnosed with Tb, 12 (25.5%) were detected only by culture. The annual incidence was 494 cases/100000 prisoners (Medellin: 515/100000; Bucaramanga: 443/100000). The median age was 30 years, 25.5% (12) had less than 15 days of cough, 12.7% had past history of TB and 44.6% (21) had prior contact with a Tb patient, 13 of the contacts were prisoners. TB-HIV co-infection was diagnosed in two cases, and we found two cases resistant to streptomycin and one to isoniazid. The median of square meters per person was 1.84 (IQR = 0.96-3.56).

Conclusion: TB in jails was very high in our study, about 20 times higher than in general population in Colombia that is 25 cases/100000 inhabitants. This illness should be considered in inmate patients with lower respiratory symptoms of any duration confined in those places and perform mycobacterial culture.

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